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Quarterly Journal of Conchology

V.I.





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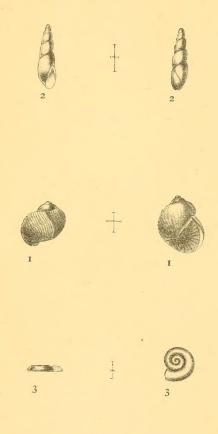
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QUARTERLY JOURNAL

OF

CONCHOLOGY.

INTRODUCTION.

We are glad to find that the study of the science of Conchology is becoming much more general. We are glad because we think it possesses advantages which many other sciences only possess in a smaller degree. Its objects lie around us on every hand, on mossy banks, in glassy pools, in rustling woods, in the deep sea, and on its shore. Its spoils too, are of very varied beauty of form and colour—the houses of the Mollusca—how many, very many of our fellow-men cannot boast of houses so comfortable, so convenient, so exceeding beautiful. These spoils need no elaborate preparation on the part of the collector, nor jealous care for their preservation, a plain wood cabinet, or boxes, a small round fishing net, some

chip or tin pill boxes, are all that is required.

It must not be thought that the field of study is a restricted one, for besides a knowledge of the Molluscs themselves, a practical knowledge of Botany is desirable, in order to recognize on what plants they feed, and also that by recognizing the food-plant we may be on the alert to find the animal. Then an acquaintance with Geology will show upon what soils and rocks certain species are most surely found, and it will allow of an intelligent comparison with all the myriad fossil forms; for it must be remembered that by far the largest proportion of fossil remains are molluscous. A competent knowledge of Microscopy will amply repay some amount of patience, of time, and some little cost by proving an "open sesame" to many hidden wonders. Nor should we consider the study of these lowly creatures as likely to lead to no direct useful result; for it is by the study of the lower forms of life, that we hope perhaps ultimately to discover, what is life.

In introducing the Quarterly Journal of Conchology to the public, we have been desirous of satisfying a long-felt want of students of the science. Our chief objects are two—first, to encourage and stimulate original research by freely opening our pages to all who take an interest in the science, however humble they may be, and more especially to all careful and accurate observers. Second, to bring the works of the great masters of the science within the reach of all collectors, by reprinting from time to time in our pages their more important papers which appear in the high priced publications.

In addition to these two chief objects, we shall endeavour to point out the great importance of, and to promote the study of the geographical distribution of species. By a systematic inquiry into this subject, in which but little has been done, we believe many interesting phenomena will be discovered, bearing on the habits, food, and perhaps the origin of varieties. We must strongly urge the formation of local lists in every district. We shall always be glad to make them public. We may shortly be able to propose a scheme which will give a more organized character to this important work.

We hope that our pages may also afford a means for comparing results on the part of students, for encouraging the undertaking of combined and definite work, and also afford a means of general communication.

Thus far as regards present students, but is it too much to hope that we may be the means of inducing others to take up the study? We cannot, it is true, offer any "fierce exciting joys" in its pursuit, but to those who wish a change from the bustle and haste of life, and from the feverish excitement of political and social strife, we can promise quiet, refreshing enjoyment—country rambles in the summer time—long nights in winter, arranging, studying, tabulating, and recording results, and comparing them with those of other collectors. In accepting this escape from the turmoil of ordinary life, we need not fear we shall lose our interest in our fellow men, in their well-being and progress, but we hope shall each be able to say—

"I love not man the less, but nature more
From these our interviews in which I steal
From all I was, or am, or may be, and mingle with the universe and feel
What I can ne'er express, yet cannot all conceal."

A LIST OF LAND AND FRESHWATER SHELLS COLLECTED THE NEIGHBOURHOOD OF IN WAKEFIELD.

By JOSEPH HEBDEN.

This List of Shells is the result of several years' collecting, and for much valuable information, I am indebted to my friends Messrs. Wm. Lund and G. Taylor, the former of whom was for many years a most assiduous and successful conchologist.

It might have been made much more extensive but for the

desirability of restricting the area of the district.

Sphærium corneum L.—Common in the ponds and canals throughout the district.

Sphærium rivicola Leach.—Plentiful in the Barnsley and

Stanley canals.

Sphærium ovale Ferussac.—This local species is plentiful in the canal near Stanley, and is met with more rarely in the Wakefield and Barnsley canal.

Sphærium lacustre Muller.—Occurs in the Barnsley

canal, plentiful in a pond at Sandal.

Pisidium amnicum Muller.—Common in the Barnsley and Stanley canals.

Pisidium fontinale *Draparnaud*.—Pond at Sandal.

Pisidium fontinale var. Henslowana Shepp.—Barnsley

Pisidium fontinale var. pulchella Jenyns.—Barnsley canal. Pisidium nitidum Jenyns.—Found in ponds throughout the district.

Unio tumidus *Phillipson*.—In the canal near Barnsley. Unio tumidus var. radiata Jeffr.—Plentiful in the canal

at Heath. Unio pictorum L.—Moderately common in the Barnsley

and Stanley canals. Anodonta cygnea L.—Common throughout the district.

Anodonta cygnea var. radiata Muller.—In the lake at Nostell Priory.

Anodonta anatina L.—Occurs in the canal near Barnsley. Anodonta anatina var. radiata /effr.—Canal, nr. Barnsley. Dreissena polymorpha Pallas.—Plentiful in the Barnsley canal, Wintersett Reservoir, and New-miller-dam.

Neritina fluviatilis L.—Common in the Wakefield and

Barnsley canal.

Paludina vivipara L.—Common in the Wakefield and Barnsley canal, and more rarely in a stream near Sandal Castle.

Bythinia tentaculata L.—Commonthroughout the district. Bythinia tentaculata var. decollata Jeffr.-Found plentifully at Kirkthorpe.

Bythinia Leachii Shepp.—Found commonly amongst decay-

ing sedges at the sides of the Wakefield and Barnsley canal.

Valvata piscinalis Muller .- Moderately common in the Wakefield and Barnsley canal.

Valvata piscinalis var. subcylindrica Jeffr.—River Went, near Ackworth.

Planorbis nitidus Muller.-Found at Kirkthorpe and

Hemsworth.

Planorbis nautileus L.—Common at Ossett and Cold Hiendley.

Planorbis nautileus var. cristata Draparnaud.—Occurs

with the type.

Planorbis albus Muller.—Various places round Wakefield. Planorbis albus var. Draparnaldi Shepp.—Very fine specimens of this local variety from a pond at Sandal.

Planorbis spirorbis Muller.—Common throughout the

district. A beautiful white variety occurs at Dirtcar

Planorbis vortex L.—Very common throughout the

district, with P. spirorbis.

Planorbis carinatus Muller.—Common in the Wakefield and Barnsley canal. A dwarf form occurs in a pond nr. Sandal Castle.

Planorbis complanatus *L.*—Common throughout district. Planorbis corneus *L.*—Abundant in a pond at Castleford. Evidently introduced.

Planorbis contortus L.—Very abundant in ponds at

Castleford and near Frystone Hall.

Physa hypnorum L.—Common in a ditch at Stanley, where the specimens are very fine; more rarely at Cold Hiendley. Very common at Horbury.

Physa fontinalis L.—Common in the Barnsley canal, and

in nearly every stream throughout the district.

Physa fontinalis var. oblonga Jeffr.—Common in the River Went at Ackworth.

Limnæa peregra Muller.—In a ditch at Stanley, common. Limnæa peregra var. ovata Draparnaud.—Barnsley canal. Other forms of this most variable species occur throughout the district.

Limnæa auricularia L.—Occurs in canals at Horbury and Walton, and in the Cold Hiendley and Hemsworth dams.

Limnæa stagnalis L.—Barnsley canal. Very fine speci-

mens at Kirkthorpe.

Limnæa stagnalis var. fragilis L.—Abundant in a stream near Castleford.

Limnæa palustris *Muller*.—In a pond on the canal side near Heath Bridge.

Limnæa palustris var. elongata Jeffr.—Occurs in the same pond.

Limnæa palustris var. tincta Jeffr.—Barnsley canal.

Limnæa truncatula *Muller*.—Common in ditches throughout the district.

Limnæa truncatula var. elegans Jeffr.—Standbridge, near Sandal.

Limnæa glabra *Muller*.—Very abundant in a pond at Havercroft where the specimens are small. Common near Ossett.

Limnæa glabra var. elongata Jeffr.—Common and very fine at Ossett, amongst which are numbers of decollated specimens Ancylus fluviatilis Muller.—Common at Kirkthorpe.

Ancylus fluviatilis var. Capuloides Jan.—This local and rare variety occurs in the River Went, near Ackworth, also in a small stream near Sandal Castle.

Ancylus fluviatilis var. albida Jeffr.—Pugneys.

Ancylus lacustris L.—Barnsley canal occasionally, plentiful in a pond at Cold Hiendley.

Arion ater L.—Common throughout the district.

Arion flavus Fer.—Common throughout the district.

Limax gagates *Drap*.—Bridge at Fall Ing.

Limax flavus L.—Common throughout the district.

Limax agrestis L.—Common.

Limax arborum *Bouch.-Chant.*—Occurs at Haw Park. Limax maximus *L.*—Common throughout the district. Succinea putris *L.*—Common throughout the district.

Succinea elegans Risso.—Common at Ackworth.

Vitrina pellucida *Muller*.—Common throughout district. Zonites cellarius *Muller*.—Common throughout district. Zonites alliarius *Muller*.—Common throughout district. Zonites nitidulus *Drap*.—Common throughout district. Zonites nitidulus var. nitens *Michaud*.—Beautiful pink-

Zonites nitidulus var. nitens *Michaud.*—Beautiful pinkish white coloured specimens of this variety occur at Newton.

Zonites purus Alder.—Occurs at Haw Park.

Zonites purus var. margaritacea Jeffr. — Common throughout the district.

Zonites radiatulus Alder.—Rare at Sandal Castle.

Zonites nitidus *Muller*.—Stanley and Cold Hiendley, locally abundant.

Zonites excavatus *Bean.*—Common at Haw Park and at Bullcliffe Wood.

Zonites crystallinus Muller.—Commonthroughout district. Zonites fulyus Muller.—Scarce throughout the district.

Helix aculeata Muller.—Common at Haw Park, and occurs sparingly throughout the district.

Helix aspersa Muller.—Common throughout the district. Helix nemoralis L.—Common throughout the district.

Helix nemoralis var. hortensis *Muller*.—Common throughout the district.

Helix nemoralis v. hybrida Poi.—Occasionally at Newton.

Helix nemoralis var. major Fer.—Chevet, rare.

Helix nemoralis var. minor Jeffr.—Rather common at Stanley.

Helix Cantiana *Montagu*.—Canal side near Walton, and at Chevet Lane. At the latter locality specimens are scarcer and of less size than formerly.

Helix rufescens *Pennant*.—Common throughout district.

Helix rufescens var. albida *Jeffr*.—Very rare, one specimen near Crofton Station.

Helix rufescens v. minor Jeffr.—Rather common nr. Chevet. Helix hispida L.—Common throughout the district.

Helix virgata Da Costa.—Very local, only occurring on and about a railway bridge near Oakenshaw.

Helix caperata *Mont.*—Common throughout the district.
Helix caperata var. ornata *Picard.*—Occurs along with the type, frequently.

Helix caperata var. subscalaris Jeffr.—Rare, one speci-

men on Sandal Castle Hill.

Helix caperata var. Gigaxii Charp.—Frequently met with in Chevet Lane.

Helix ericetorum *Muller*.—Sandal Castle Hill, where I also found a scalariform specimen.

Helix rotundata Muller.—Common throughout the district.
Helix rotundata var. alba Moquin-Tandon.—My friend, Mr.
G. Taylor, has taken three specimens of this rare variety near Ossett.

Helix pygmæa Drap.—Scarce at Haw Park and other

places in the district.

Helix pulchella Muller.—Common in a quarry at Oaken-

shaw and New-miller-dam.

Helix pulchella var. costata Muller.—Occurs plentifully with the type at Oakenshaw.

Bulimus obscurus *Muller*.—Rare at Sandal Castle Hill. Vertigo pygmæa *Drap*.—Rare, occurs at Dirtcar, where the specimens have four teeth.

Clausilia rugosa Drap.—Occurs at Sandal, Newmarket,

and Woodlesford.

Cochlicopa lubrica Muller.—Haw Park.

Cochlicopa lubrica var. lubricoides Fer.—Haw Park and Sandal Castle Hill.

Acme lineata *Drap.*—Living specimens of this rare Mollusk were found in decaying timber on the canal side, near Haw Park, by myself and Mr. Wm. Lund.

SANDAL COMMON, Near Wakefield, Dec. 26th, 1873.

On Varieties of Paludina vivipara and Planorbis glaber.—Having beenso fortunate during the past year as to find a new and distinct variety of each of these fresh-water Shells, which have been kindly determined for me by Mr. J. G. Jeffreys, F.R.S., I send a description of them for the information of your readers.

PALUDINA VIVIPARA Var. ATRO-PURPURA.—Shell same shape as the normal form, but of a black colour, which, when viewed by transmitted light, is dark purple, being in fact the same colour as the bands of other specimens which occur with it. I found it in the canal at Pontypool this spring in numbers, together with the type and the variety unicolor; and besides this, there were with them all intermediately coloured ones, between unicolor and atro-purpura; these evidently being the ends of a series, unicolor being that in which all traces of the bands have vanished, and atro-purpura that in which they have so spread themselves as to have entirely obliterated all traces of the green ground colour of the typical shell.

PLANORBIS GLABER var. COMPRESSA—Shell more concave below than in the type, and only depressed in the centre on the upper side, the whorls also are rounder and do not increase so quickly, making the whole shell more compact. Found in the neighbourhood of Birmingham.—R. M. LLOYD, 60, Villa-road, Handsworth, Birmingham, December 18th, 1873.

ON THE OCCURRENCE OF COCHLICOPA TRIDENS
VAR CRYSTALLINA, DUPUY, IN THE NEIGHBOUR-HOOD OF BIRMINGHAM.

By G. SHERRIFF TYE.

Any interested reader turning to page 291, vol. I. of Mr. Jeffreys' "British Conchology," will there find recorded the occurrence of this lovely little shell at Weoley Castle. [In Mr. Jeffrey's book spelt "Wheeley."] I believe the original spot from whence the shells here indicated were taken, is in a garden now attached to a farm-house. A short distance from this spot my friend Mr. Nelson, after diligent search, was rewarded by finding two or three shells, shewing much to our mutual satisfaction, that this charming variety still inhabits the locality.

Having hitherto looked upon it as a rarity, I consider myself fortunate in having since found it in three other places in the Birmingham district. First at Perry Bar, secondly at Hamstead, at the former place I found an interesting variety of a pale whitish yellow colour, more opaque than *crystallina*, but brilliant. Hamstead furnished the greatest number of the crystalline variety. My friends, Messrs. Nelson and Lloyd and myself, obtained amongst us nearly two dozen shells, yet left many young to furnish a progeny for future collectors.

The third habitat is Dudley, where, on a pleasant day in April this year, Mr. Lloyd and myself found it in company with *C. lubrica* and *Carychium minimum* in the still romantic grounds of Dudley

Castle.

These three localities are all in the county of Stafford, and their distance from Birmingham is as follows:—Perry Bar, $2\frac{1}{2}$ miles; Hamstead, $2\frac{1}{2}$ miles; Dudley about 8 miles. Weoley Castle is in Worcestershire, and is situated about $4\frac{1}{2}$ miles from Birmingham.

A single specimen has also been taken by Mr. Shrive, near

Knowle, Warwickshire.

C. tridens is distributed throughout the neighbourhood of Birmingham, occurring abundantly in many places and sparingly in others; indeed a collector searching for it in almost any "likely looking" locality would hardly be disappointed, yet it appears to be much less plentiful in other districts.

It would be interesting to learn the distribution of this species in Great Britain. The records of its occurrence in our eastern counties are rare, and it is doubtful whether it inhabits Scotland or Ireland. Mr. Jeffreys has recorded one locality for it in Wales.

It may be looked for at the roots of grass (i.e., at the base of the blades) or in the middle of thick tufts, among moss, or under

herbage or stones in rather damp places "all the year round," but early in the year, if the weather be mild, is the best time, before vegetation gets too luxuriant and Phœbus too powerful, for our little Cochlicopa, like many others of our native mollusks, is no "feather-bed soldier" but bestirs himself ere yet the last snow has departed before the soft breath of spring.

Unlike its brother *C. lubrica*, *C. tridens* has a limited foreign distribution, being only reported from France and Germany, while

the former has a world-wide distribution.

HANDSWORTH, December 18th, 1873.

THE MOLLUSCA OF EUROPE COMPARED WITH THOSE OF EASTERN NORTH AMERICA.

By J. GWYN JEFFREYS, F.R.S.

[Reprinted, by the kind permission of the Author, from the Annals and Magazine of Natural History for October, 1872.]

After mentioning that he had dredged last autumn on the coast of New England in a steamer provided by the Government of the United States, and that he had inspected all the principal collections of Mollusca made in Eastern North America, the author compared the Mollusca of Europe with those of Massachu-He estimated the former to contain about 1000 species (viz. 200 land and freshwater, and 800 marine), and the latter to contain about 400 species (viz. 110 land and freshwater, and 200 marine); and he took Mr. Binney's edition of the late Professor Gould's 'Report on the Invertebrata of Massachusetts,' published in 1870, as the standard of comparison. That work gives 401 species, of which Mr. Jeffreys considered 41 to be varieties and the young of other species, leaving 360 apparently distinct species. About 40 species may be added to this number in consequence of the recent researches of Professor Verrill and Mr. Whiteaves on the coast of New England and in the Gulf of St. Lawrence. Jeffreys identified 173 out of the 360 Massachusetts species as European, viz., land and freshwater 39 (out of 110), and marine 134 (out of 250), the proportion in the former case being 28 per cent., and in the latter nearly 54 per cent.; and he produced a tabulated list of the species in support of his statement. He proposed to account for the distribution of the North-American Mollusca thus identified, by showing that the land and freshwater species had probably migrated from Europe to Canada through Northern Asia, and that most of the marine species must have been transported from the Arctic seas by Davis's-Strait current southwards to Cape Cod, and the remainder from the Mediterranean and western coasts of the Atlantic by the Gulf-stream in a northerly direction. He renewed his objection to the term "representative species." The author concluded by expressing his gratitude for the kind hospitality and attention which he received from naturalists during his visit to North America last year.

Mollusca of Eastern North America, according to Binney's edition of Gould's 'Invertebrata of Massachusetts.'

a)	Name of Species.	r S. of e Cod.	European.	Synonyms and Remarks.
Page.		N. or Cape	Eur	
28	Teredo navalis, Linne	N	E	Wood's Hole, Mass., J.G.J.
29 30	Norvegica, Spengler megotara, Hanley	N N	E	
31	Thompsonii, Tryon	S		
32	dilatata, Stimpson	N		T. megotara, variety.
33	chlorotica, Gould (1870) Xylotrya fimbriata, Jeffreys	N S	E	T. pedicellata, Quatrefages
34 36		2.9		[1849, var.]
38	truncata, Say	S		
39		N	E	Genus Pholas.
40	Solen ensis, L Solecurtus gibbus, Sp	1 0	E	
44	divisus, Sp	0		
46	Machæra squama, Blainville	70. T		G. Siliqua.
47 48	Solemya velum, Say (1822)	79. 7		G. Siliqua. S. togata, young.
50	borealis, Totten (1834)		E	S. togata, Poli, 1791.
51	Panopæa arctica, Lamarck (1818)		E	Saxicava Norvegica, sp. 1793
53	Glycymeris siliqua, <i>Chemnitz</i> Mya arenaria, <i>L</i>	~ ~	E	G. Cyrtodaria.
55 58	truncata, L	3.7	E	
58 60	Corbula contracta, Say	S	_	
61 62	Neæra pellucida, <i>St.</i> Pandora trilineata, <i>Say</i>	74.7	E	
64	Lyonsia hyalina, Conrad			Allied to L. Norvegica.
65	arenosa, Müller	N	E	3
66	Anatina papyracea, Say			Allied to Thracia prætenuis
68	Cochlodesma Leanum, Conrad	N		which is European.
69	Thracia Conradi, Couthouy (1838			T. inflata, J. Sowerby, 1845.
71	myopsis (Beck) Müll (1842		E	T. truncata, Brown, 1827.
72	truncata, Mighels & Adam. (1842)	76.7	E	Not T. truncata, Br. T. sep-
				tentrionalis, Jeffr. MS.
73	Mactra solidissima, Ch	N		Loven received a single valve from Finmark.
75	ovalis, Gould	. N		7 7 7 7 7
77	lateralis, Say	35.7		. Allied to M. subtruncata,
70	Cumingia tellinoides, Conr	. s		which is European.
79 80	Ceronia arctata, Conr	76.T		. Mesodesma deauratum, var.
81	deaurata, Turton	. N		. G. Mesodesma
83	Kellia planulata, St suborbicularis, Montagu.	N		. G. Laswa.
85	Turtonia minuta, Fabricius		E	G. Cyamium.
86	Montacuta elevata, St	N	E	
87		N	E	Linne instead of Pennant. S. rugosa, var.
90	Petricola pholadiformis, Lam.			. Valentia, Ireland; fragment
92	dactylus, Say	N		. P. pholadiformis, var.
93	Macoma fusca, Say (1826) .	N		
95		S	E	2. (4.647.64, 011,, 1/02,
97	tenera, Say	N		Allied to T. tenuis.
98	Lucina filosa, St. (1851)	N	E	L. borealis, L., 1766.
		,		

1		S. of	in.	
	Name of Species.	S	European	Synonyms and Remarks.
32	Name of Species.	or	ıro	by nonyms and Remarks.
Page.		N. or Cape	Á	
	T			
99	Lucina dentata, Wood	S	Τ\	4
100	Cryptodon Gouldii, Phil. (1845)	N	E	Axinus flexuosus Mont,
				var. 1803.
IOI	Sphærium simile, Say (1816)	N		S. striatinum, Lam., 1818.
103	partumeium, ,, (1822)	N	E	S. lacustre, Muller, 1774.
104	rhomboideum,,,	N		Allied to S. corneum,
105	Vermontanum, Prime	2.7	-	which is European.
	(1861)	N	E	S. pisidioides, Gray, 1856.
				Perhaps introduced into
		'AT		England.
106	truncatum, Linsley			S. lacustre, var.
107	tenue, Prime	N		C 1 . D 11 1.**
107	securis, ,, occidentale,,,	N		S. lacustre, var. Rykholtii
108	occidentale, ,,	N	E	D ' M 11
109	risidium dubium, say (1810)		E	P. amnicum, Mull. 1774.
110	Adamsii, <i>Prime</i> (1851) '	N	Е	P. fontinale Draparnaud,
110	compressum, ,,	N		[1805.
112	æquilaterale, ,,	N		Allied to P. nitidum, which
	f D	N		is European.
113	ferrugineum, Prime		Ë	P. pusillum, var. obtusalis
113	abditum, Haldeman (1841)	N	E	P. pusillum, Gmelin, 1788
115	variabile, <i>Prime</i> ventricosum, ,,	N		PossiblysomeoftheseNorth
110	ventricosum, ,,	Τ.		American species may be
				reduced in number.
117	Astarte castanea, Say	N		Perhaps a variety of A.
11/	Astarte castanea, Say	21		borealis, Ch.
119	sulcata, Da Costa	N	E	Including A. undata, Gould
119	sureact, 200 obsta		-	=A. Omalii, J. Sow.
121	semisulcata, Leach (1817)	N	E '	A. borealis, Ch., 1784 var.
123	quadrans, Gould	N		A. castanea, var. nana.
124	elliptica, Hanley	N		A. sulcata, var.
125	Banksii, Leach (1817)	N	Е	A. compressa, Mt. 1803 var.
126	crebricostata, Forbes (1847)	N	E	A. depressa, Br., 1827.
127	Astarte Portlandica, Mighels	N		A. compressa, var.
128	Gouldia mactracea, Linsley	TA T		G. Crassatella.
129	Cyprina Islandica, L	N	E	
131	Cytherea convexa. Say	N		G. Venus.
133	Venus mercenaria, L	N		
135	notata. Sav	N		V. mercenaria, var.
136	Tapes fluctuosa, Gould	N	E	G. Venus.
137	Gemma gemma, Totten	N		V. mercenaria, young.
138	Manhattensis, Prime	S	-	
139	Cardium Islandicum, L	N	E	
141	elegantulum, (Beck), Möll.	N	E	
143	Liocardium Mortoni, Conr	N		G. Cardium.
144	Aphrodita Grænlandica, Ch.	N	E	
146	Cardita borealis, Conr. (1836)	N	E	C. sulcata, Bruguiere, 1792
147	Arca pexata, Say	S		[var.
148	transversa, Say	N	TC	A. pexata, var.
149	Nucula tenuis, Mont	N	E	
150	proxima, <i>Say</i> expansa, <i>Reeve</i>	N		AT +
152		N	E	N. tenuis, var.
153	delphinodonta, Migh	N	E	V mulion Com C 7 7
154	Yoldia limatula, Say (1831)	N		Y. artica, Sars. G. Leda.
155	obesa, St	TA		Allied to Leda lucida,
156	siliqua, Reeve (1855)	N	Е	which is European. L. arctica, Gray, 1819.
		76.7	E	G. Leda.
157	thraciæiormis, Storer	1 7.4		C. Luu.

Page.	Name of Species.	N. or S. of Cape Cod.	European.	Synonyms and Remarks.
159	Yoldia sapotilla, Gould (1841)	N	E	L. hyperborea, Lov. 1846. G. Leda.
160 161	myalis, <i>Couth</i> Leda tenuisulcata, <i>Couth</i> (1838)	N N	 E	L. pernula, Mull. 1770, var.
163	Jacksonii, Gould	N		L. pernula, var.
164	minuta, Fabr	N	Е	Mull. instead of Fabr.
165	Unio complanatus, Solander	N N	• • • •	L. minuta, var.
169	nasutus, Say	N		
170	\dots radiatus, Gm . \dots \dots	5		
172	cariosus, Say ochraceus, Say	S		Perhaps <i>U. cariosus</i> , var.
173 174	Margaritana arcuata, Bar. (1823)	N	E	Unio margaritifer, L. 1766
176	undulata, Say	S		G. Unio.
177	marginata, Gould	S	•••	G. Unio.
178	Anodon fluviatilis, Lea	S	•••	Dillwyn, 1817 instead of Lea Anodonta cygnea L. 1766
180	implicata, Say	N		G. Anodonta. A. cygnea van
182	undulata, Say	S	E	G. Anodonta.
183	Mytilus edulis, L. Modiola modiolus, L.	N	Ē	G. Mytilus.
188	plicatula, Lam	N	***	G. Alytilus.
190	Modiolaria nigra, Gray	N	E	
192	discors, L corrugata, St Crenella glandula. Tott.	N	Ē	
193	Crenella glandula. Tott.	N		
195	pectinula, Gould (1841)	N	E	C. faba, Fabr., 1780.
196	Pecten tenuicostatus, Migh&Ad Islandicus, Miill	N	E	
190	irradians, Lam	N		
200	fuscus, Linsl,			P. irradians, young.
202	Ostrea Virginiana, Lister borealis, Lam	N S		O. Virginiana, var.
203	Anomia ephippium, L	N	E	
204	aculeata, Gm			A. ephippium, var.
205	electrica, L.	N		A. ephippium, var. A. ephippium, young.
206	squamula, L Terebratulina septentrionalis	IN	***	A. epnippium, young.
200	Couth (1839)	N	E	Terebratula caput-serpentis
210	Rhynchonella psittacea, Gm.	N	E	[L., 1764, var.] Mull. instead of Gm. G.
211	Waldheimia cranium, <i>Gm</i>	N	L	Terebratula.
213	Philine sinuata, St	N		Allied to P. nitida, which
213	Philine sinuata, St quadrata, S. Wood	N	E	[is European.] P. lima, Br., 1827.
214	lineolata, Couth (1839)	N	15	1. 11/114, DI., 102/.
215	Scaphander puncto-striatus, Migh. & Ad. (1842)	N	E	S. librarius, Lov., 1846.
216	Diaphana hiemalis, Couth (1839)		E	Utriculus globosus Lov 1846
216	debilis, Gould (1840)	N		Utriculus hyalinus, Turt., 1834.
217	Utriculus Gouldii, Couth. (1839)	N	E	U. turritus, Moll., 1842.
218	pertenuis, Migh	N		U. Gouldii, young.
219	Cylichna alba, Br.	S	E	
221	orvza, Tott, (1835)	N	E	Bulla utriculus, Brocchi,
222	Bulla incincta, Migh	N		[1814.
222	solitaria, Say occulta, Migh. & Ad. (1842)	S	E	Cylichna striata, Br., 1827
223	Tornatella puncto-striata, Ad			Perhaps Actaon pusillus.
	1	1	<u> </u>	G. Actaon.

		1		
Page.	Name of Species.	N. or S. of Cape Cod	European,	Synonyms and Remarks.
226 228 229	Polycera Lessonii, D'Orbigny Doris bilamellata, L tenella, Agassiz	N	E E 	Perhaps D. inconspicua, which is European.
229	pallida, Ag. (1870)	N	E	D. aspera, Alder & Hancock, 1842.
230 231 232	diademata, Ag. (1870) planulata, St. (1853) grisea, St	N N N	E E	D. tuberculata, Cuvr. 1802 D. repanda, A. & H., 1842 "Very closely allied to D. inconspicua."
233	Ancula sulphurea, St	N		"Very like to Ancula cristata," which is European
234 236 238 240 241	Dendronotus arborescens, Müll. Dota coronata, Gm Æolis papillosa, L salmonacea, De Kay(1843) Bostoniensis, Couth	N N N N	E E	Eolis bodoensis, Moll., 1842
242 243 245	rufibranchialis, Johnston pilata, Gould stellata, St	N N N	E	"Approaching closely E. coronata of Forbes," [which is European.
246 246 247 248 249	purpurea, St	N N N N	E E 	"Nearly allied to <i>E. con-</i>
250 251 252 253 254 255 256 258 258 259	Calliopæa (?) fuscata, Gould Embletonia fuscata, Gould	SSZZZZZZZZZ	E	cinna,"which is European C. marginatus, not C. cin-
260	ruber, Lowe	N	Е	ereus. A single speci- [men only; questionable
261 263 263	marmoreus, Fabr albus, Mont mendicarius, Migh. & Ad.	N N	E	L., not Mont.
264	(1842) Amicula Emersonii, Couth	N	Е	C. Hanleyi, Bean, Thorpe, [1844.
266 266	Dentalium dentale, L Entalis striolata, St. (1851)	N N	E	D. striolatum, var. Dentalium abyssorum, Sars, 1858, var.
267 269	Tectura testudinalis, Mill alveus, Conr.	N N	E	T. testudinalis, var.
270 271 272	Lepeta cæca, Miill Crepidula fornicata, L plana, Say	N N N	E E	C. fornicata, var.
273	glauca, Say glauca, Say	N N		C. fornicata, var.
275 276 277	Crucibulum striatum, Say Cemoria noachina, L Ianthina fragilis, Deshayes	N N N	E	G. Puncturella. Lam., not Desh. Specific name changed to communis, 1822.

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Page.	Name of Species.	N. or S. of Cape Cod.	European,	Synonyms and Remarks.
278	Adeorbis costulata, Moll	N	Е	G. Mölleria.
279	Margarita cinerea, Couth	N	E	G. Trochus.
280	undulata, Sowerby (1838)	N	E	Trochus Grænlandicus,
	1 11 1 70 7			Ch., 1781.
281	helicina, Fabr.	N	E	G. Trochus.
282	argentata, Gould (1841) obscura, Couth	N N	E	Trochus glaucus, Moll. 1842 G. Trochus.
284	acuminata, Migh. & Ad.	N		Trochus varicosus, young.
285	varicosa, Migh & Ad(1842)	N	E	M. elegantissima, Bean, S. Wood, 1848. G. Trochus
286	Trochus occidentalis, Migh & Ad	N	- E	11 00d, 1040. U. 1700nus
286	Valvata tricarinata, Say (1817)	N	E	V. piscinalis, Mull., 1774,
288	pupoidea, Gould	N		[var.
289	Melantho decisa, Say	N		G 77 1 11
292	Amnicola pallida, Haldeman	N	4 4 4,	G. Hydrobia.
293	limosa, Say granum, Say	N N		G. Hydrobia. G. Hydrobia.
295	Pomatiopsis lapidaria, Say	S	•••	G. 11yurootu.
296	Skenea planorbis, Fabr	N	E	
297	Rissoella? eburnea, St	N		G. Rissoa.
297	sulcosa, Migh	N		G. Rissoa. One specimen
298	Rissoa minuta, Tott. (1834)	N	E	only. Hydrobia ventrosa, Mont.,
	251 7 0 4 1	D.T.		1803, var.
299	latior, Migh. & Ad	N N	E	P stuigts I Adoms Thor
299 300	aculeus, Gould (1841) multilineata, St	N		R. striata, J. Adams, 1795. R. striata, var.
301	Mighelsi, St	N		11: 307 14:44, 74:15
301	exarata, St	N		
301	carinata, Migh. & Ad	N	_	
302	Lacuna vincta, Mont. (1803)	N	E	L. divaricata, Fabr., 1780.
303	neritoidea, Gould (1840) .	N	E	L. pallidula, Turt. 1827 var Maton, instead of Don.
304 306	Littorina rudis, Don tenebrosa, Mont	N	E	L. rudis, var.
398	litorea, L	N	Ē	2. 7111113, 141.
309	palliata, Say (1822)	N	Е	L. obtusata, L., 1766, var. L. limata, Low, 1846.
311	irrorata, Say Scalaria Nov-angliæ, Couth	S N		S. multistriata, var.
312	lineata, Say	S.		
313	multistriata, Say	S	E	
314	Greenlandica, Ch	N	E	
315	Cæcum pulchellum, St Vermetus radicula, St	S		
317	Turritella erosa, Couth (1839)	N	E	T. polaris, Möll., 1842.
318	reticulata, Migh. & Ad.	-		
	(1842)	N	E	T. lactea, Möll., 1842.
319	acicula, St	N		
320	Aporrhais occidentalis, Beck	N S		G. Cerithium.
321	Bittium nigrum, Tott	N	E	Cerithiopsis tubercularis,
322 323	Triforis nigrocinctus, Ad.	S		[Mont., 1803.]
325	Odostomia producta, Ad	S		
325	fusca, Ad	S		1
327	dealbata, St	N		
327	modesta, St bisuturalis, Say	N		
327	bisuturalis, Say	N S		S. impressa, var.
328 329	trifida, Tott	N	•••	S. Unipressur, vais
329				

Name of Species.					
331	Page.	Name of Species.	N. or S. of Cape Cod	European.	Synonyms and Remarks.
331		Odostomia impressa, Say (1822) Turbonilla interrupta, Tott (1834)	S	 E	Melania rufa, Ph., 1836,
Velutina haliotoidea, Fabr. (1780) N E	332	Eulima oleacea, Kurtz & St	S		Perhaps Turbo lacteus, L. G. Odostomia. Apparently not this species,
1848	335 337	Lamellaria perspicua. I	N N	E	V. lavigata, Pennant, 1777 V. undata, Brown, 1827.
Satistic Satistic	34I 342	triseriata, Say Grænlandica, Möll Natica clausa, Bdp. & Sow. (1829)	N N	E	Natica heros, young. Beck, fide Moll. G. Natica
Amauropsis helicoides, Johnston (1835)	344 345	Neverita duplicata, Say	N S		G. Natica. Natica Smithii, Brown 1839
Bela turricula, Mont. N E G. Pleurotoma.	349	Pleurotoma bicarinata, Couth	N	E	Natica Islandica, Gm. 1790
1842. G. Pleurotoma. Pleurotoma Trevelyana, Turt., 1834.	351 352	Bela turricula, Mont harpularia, Couth	N N	E E	G. Pleurotoma. G. Pleurotoma.
355		decussata, Couth (1841)	N	Е	1842. G. Pleurotoma. Pleurotoma Trevelyana,
355	355		N	Е	Defrancia Pingelii, Moll.
357				Е	Buccinum pyramidale, Ström, 179—. G. Pleuro-
Nassa obsoleta, Say N Subgenus Desmoulea.	357 358 359	rosacea Gould (1840)	N N S		C. Holbollii, Beck, Möll.,
366 Buccinum undatum, L. N E Not that species, but B.	362 364	Nassa obsoleta, Say	N N		Subgenus Desmoulea. N. propinqua, J. Sow., 1824
369	366	Buccinum undatum, L	N	Е	
371 Fusus Islandicus, Gm	370	cinereum, Say	N		B. glaciale, L., 1766. G. Urosalpinx, allied to Purpura.
373 ventricosus, Gray N 374 tornatus, Gould (1840) N E F. despectus, L., 1766. 375 decemcostatus, Say N 377 Trophon clathratus, L. N E Not that species, but T. truncatus, Str.				i	Not that species, but F.
374 tornatus, Gould (1840) N E F. despectus, L., 1766. 375 decemcostatus, Say N 377 Trophon clathratus, L N E Not that species, but T. truncatus, Str.	373	ventricosus, Gray	N		Fusus Sabini, Gray.
truncatus, Str.	375	tornatus, Gould (1840) decemcostatus, Say	N		
					truncatus, Str.

Page.	Name of Species,	N. or S. of Cape Cod.	European.	Synonyms and Remarks.
379 380	Trophon muricatus, Mont. Busycon canaliculatum, L.	S	Е	Doubtful as American.
383 385 386	Fasciolaria ligata, Migh. & Ad. Ranella caudata, Say	S N S		
387	Cerithiopsis Emersonii, Ad. terebralis, Ad. (1841)	S	 E	G. Cerithium, not Cerithiopsis. C. trilineata, Ph., 1836.
390	Trichotropis borealis, Sow	N	Е	Broderip and Sowerby's species.
391 394 395	Admete viridula, Fabr Vitrina limpida, Gould, (1850) Hyalina cellaria, Müll.	N N N	E E E	V. pellucida, Mull., 1744 G. Zonites.
396	arborea, Say	N		Closely allied to Z. excava- tus, but umbilicus much less open.
397 398	electrina, Gould (1841) indentata, Say	N	Е	Zonites radiatulus, Alder, [1830, var. alba.
399 400 401	minuscula, Binney Binneyana, Morse milium, Morse	N		
401	chersina, Say (1821)	N	E	Zonites fulvus, Mull., 1774
403 404 404	minutissima, Lea (1841) multidentata, Binney lineata, Say	N	Е	Helix pygmæa, Drap., 1805
406	Macrocyclis concava, Say Limax maximus, L.	N	E	
408 409 410	agrestis, L campestris, $Binney$ (1841) flavus, L .	N	EEE	L. lævis, Mull., 1774.
412	Helix alternata, Say striatella, Anthony	N N		
415 415 417	asteriscus, Morse labyrinthica, Say hirsuta, Say	. N		
418 420	monodon, Rackett palliata, Say	N		
422 423 424	albolabris, Say	. N		
425 426	thyroides, Say Sayii, Binn	N	To	C
427 428 429	pulchella, Müll	. N	E	Sweden. H. nemoralis, L., 1766 var.
431		3.7	Е	Perhaps that species, but described as inhabiting fresh water. Cochlicopa
433	Pupa muscorum, L	N	E	lubrica, Mull. Linne's species is unascertainable. P. marginata
433 434	pentodon, Say	N		Drap.
435	fallax, Say	S		
437 438 439	contracta, Say	N		

		S. of Cod.	ii.	
		က်ပွဲ	European	0 10 1
e e	Name of Species.	or or	Lo	Synonyms and Remarks.
Page.		N. or Cape	ling.	
1 14		20	Щ.	
120	Puna continenia Can	N		
439	Pupa corticaria, Say		To T	77 -74 -44 Ald 1820
440	Vertigo Gouldii, Binn. (1843)	N	E	V. alpestris, Ald., 1830.
441	milium, Gould	N		
442	Bollesiana, Morse (1865)	N	E	V. pygmæa, Drap., 1801.
442	ovata, Say (1822)	N	E	V. antivertigo, Drap., 1801
443	ventricosa, Morse (1865)	N	E	V. Moulinsiana, Dy., 1843
		N	Ē	
444	simplex, Gould (1840)		E	V. edentula, Drap., 1805.
445	Succinea ovalis, Gould (1841)	N		S. elegans, Risso. 1826.
440	avara, Say	N		Allied to S. putris, var.
				ochracea
447	obliqua, Say (1824)	N	E	S. putris, L., 1766.
448	Totteniana, Lea	N		S. putris, var.
451	Arion fuscus, Müll (1774)	N	E	Perhaps that species. A.
43*	111011 103003, 121111 (1/14)	-	-	hortensis, Ferussac 1819.
1	7	N		
453	Zonites inornata, Say			Zonites is masculine; see
454	suppressa, Say	N		[De Montfort.]
454	fuliginosa, Griffith	N	- 1	
457	Tebennophorus dorsalis, Binn.	N		
465	Alexia myosotis, Drap	N	E	G. Melampus.
466	Carychium exiguum, Say (1822)	N	E	C. minimum, Mull., 1774.
		N		
467	Melampus bidentatus, Say	14		Specific name preoccupied.
			-	M. corneus, Desh.
471	Limnæa columella, Say (1817)	N	E	L. peregra, Mull., 1774.
473	decollata, Migh	N		L. catascopium, var.
474	ampla, Migh	N		
475	elodes, Say (1821)	N	E	L. palustris, Mull., 1774.
178	decidiose Can	N		L. truncatula, var.
478	desidiosa, Say	S		L. truncututu, vat.
479	catascopium, Say			
480	umbilicata, Ad	N		Allied to L. truncatula.
481	pallida, Ad			L. truncatula, var. elegans.
482	humilis, Say (1822)	N	E	L. truncatula, Mull., 1774
483	Physa heterostropha, Say	N		More nearly allied to P.
1-3				rivalis, Mat. & Rack.than
485	ancillaria, Say	S		
		N	E	[to P. fontinalis.
486	Bulinus elongatus, Say (1821)		E	Physa hypnorum, L., 1766.
488	Planorbis trivolvis, Say			
490	lentus, Say			P. trivolvis, var.
491	bicarinatus, Say	N		
492	campanulatus, Say			
493	1: 1 0 771-0 -1	"AT	E	P. albus, Mull., 1774.
	deflectus Say	TAT		P. albus, var. Draparnaldi
494	deflectus, Say exacutus, Say	AT		
495	exacutus, Say	TAT		Allied to P. nitidus.
497	parvus, Say (1817-19)		E	P. glaber, Jeffr., 1828. Perhaps introduced into
498	dilatatus, Gould	N	E	Perhaps introduced into
			1	England and naturalized
499	Segmentina armigera, Say	N		G. Planorbis.
501	A 1 11.1 77.11	NT		Allied to A. lacustris.
	6 41	BT		Table to 21. sections to
502		"AT	To	C C1:
504	Diacria trispinosa, Lesueur	N	E	G. Cavolina.
504	Psyche globulosa, Rang	. N		
505	Heterofusus balea, Möll	. N		G. Spirialis.
505	retroversus, Fleming	N	E	G. Spirialis.
507	Clione limacina, Phipps (1773)	N	E	C. papilionacea, Pall. 1766
509	Loligopsis pavo, Les	N	1	
	Ommestrephes socittates Eles			
510	D'Out	N.T		T
	D'Orb	. N		Lamarck's species. G. Om-
513	Loligo punctata, De Kay			[matostrephes.
514		. N		the street in the second
516		. S		S. australis, Brug. 1789-92
-	, , , , , , , , , , , , , , , , ,	-, ~		3 -1-2 3-



